

Standard Finishes For Tinnerman Palnut Fasteners Stamped "T" or "D"

Listed below are the most commonly used finishes available for protective coating and rust-proofing Tinnerman Palnut fasteners and components.

To specify desired finish use corresponding dash number, shown below as the last dash number, affixed to C and D based parts.

Examples: C00183-012-**27**, C01053-012-**4**, or D98334-071M-**963** See List Below for "PAL" stamped Parts

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|--------------------------------|---------------------------|---------------|------------------|--|---------|---|--|
| 27 | | | | Soluble Oil Dipped Ferrous parts (except stainless steel) have a light coating of soluble oil applied. Non-ferrous parts are cleaned where necessary and are left in plain condition. | Natural | Low-Cost finish, recommended on ferrous parts for conditions of relatively little orrosion or for parts that are to receive a finish in the customers' plants | 5% solution at 95 degrees Fahrenheit. Ferrous parts: first rust spots after 1 hour, end point (1/16" dia. Rust spots) after 2-1/2 hours. Non-ferrous parts: corrosion will be normal for plain finish of the material. |
| 4 | ESB-M3P4-A, ESS-MP20-A | GM4435 Code A | PS80 Plus Oil | Phosphate and Oil Parts are phosphate coated, then dipped in a special oil and spun dry | Black | Moderate corrosion resistance. Neat in appearance - will not wear off in handling. | 5% solution at 95 degrees Fahrenheit. First rust spots after 32 hours. End point (1/16" dia. Rust spots) after 48 hours. |

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|--------------------------------|---|-------------------|------------------|--|-------------------------------------|--|---|
| 1 | | GM4435 Code B | PS80, PS85 | Phosphate Coated, then Two Coats Olive Drab Paint are applied. Each coat is properly baked to obtain maximum protection. | Olive drab. | Good corrosion resistance. Does not cause hydrogen embrittlement common with electroplated high carbon spring steel. Excellent for insulating dissimilar metals against electrolytic action. | 5% solution at 95 degrees Fahrenheit. First rust spots after 48 hours. End point (1/16" dia. Rus spots) after 96 hours. |
| 67 | | GM4435 Code (093) | | Parts are phosphate coated, then two coats of aluminum paint are applied. Each coat is properly baked to insure maximum protection. | Aluminum colour - smooth appearance | Recommended in place of cadmium plating where appearance and corrosion resistance are requirements. High in abrasion resistance and a non-conductor of electricity. | 5% solution at 95 degrees Fahrenheit. First rust spots after 48 hours. End point (1/16" dia. Rus spots) after 96 hours. |
| 963 | ESAM21P2-A4, WSDM21, P13-A2, A3, WSDM21P11-B1 (S301 for Non-threaded parts) | GM6173M | PS5873 | Water Based zinc coating Dacromat 320 or equivalent plus clear sealer Parts are coated in a water based zinc coating for maximum protection. | Grey metallic. | Exceptional corrosion resistance. Does not cause hydrogen embrittlement | 5% solution at 95 degrees Fahrenheit. End point (1/16" rust spots) after 400 hours. |
| 252 | ESA-M21P2-A4-Black WSD-M21P13-A2 Black | GM6173 Black | PS5873 Black | Parts are water based zinc coated with the second coat being an organic finish. | Black. | Exceptional corrosion resistance. Does not cause hydrogen embrittlement | 5% solution at 95 degrees Fahrenheit. End point (1/16" rust spots) after 400 hours. |

NOTE: The following electroplate finishes are limited to only a few parts, such as Tubular Type clips and Tube Clamps. Please do not specify these

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|---|-------------|-----------|-------------------------|--------------------|--------------|-----------------|-------------------|
|---|-------------|-----------|-------------------------|--------------------|--------------|-----------------|-------------------|

finishes for other types of Tinnerman Palnut fasteners without the approval of our engineering department.

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|-------------|---------------|-------------------------|-------------------|--|--|--|--|
| 600 | | GM4345M Code 3MU24/0 | | Zinc Mechanical Plate Parts are mechanically plated from .00015" to .0003" thick. A clear chromate is applied as a sealer. | Satin Silver Color. | Excellent electrical conductivity and moderate corrosion resistance. No hydrogen embrittlement | 5% solution at 95 degrees Fahrenheit. End point (red rust) after 24 hours. |
| 3B | | | PS4220 Code 15 | Zinc Electroplate Parts are zinc electroplated from .00015" to .0002" thick and baked to reduce hydrogen embrittlement. | Silver Color. Slight discoloration from baking may occur | Excellent electrical conductivity and moderate corrosion resistance | 5% solution at 95 degrees Fahrenheit. End point (red rust) after 24 hours. |
| 3963 | WSS-M21P36-A2 | GM6173 | PS-5873P | Two coats of water base zinc coating (geomet) plus one coat geomet "P" clear sealer. | Silver Color | Exceptional corrosion resistance. Does not cause hydrogen embrittlement and is free of Hexavalent Chrome | 5% solution at 95 degrees Fahrenheit. End point (red rust) after 720 Hours |

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|--------------------------------|----------------------|---------|------------------|--|--------------|--|--|
| 3255 | None | None | None | Two coats of water base zinc coating (geomet). | Silver Color | Exceptional corrosion resistance. Does not cause hydrogen embrittlement and is free of Hexavalent Chrome | 5% solution at 95 degrees Fahrenheit. End point (red rust) after 330 Hours |
| 3252 | S438 & WSS-M21P36-A3 | GMW3359 | | Two coats of water based zinc coating (geomet) plus two coats of geoblack 137. | Black | Exceptional corrosion resistance. Does not cause hydrogen embrittlement and is free of Hexavalent Chrome | 5% solution at 95 degrees Fahrenheit. End point (red rust) after 480 Hours |

FINISH CROSS REFERENCE

(REFERENCE ONLY; LAST UPDATED ON 2/17/2005)

Standard Finishes for Tinnerman Palnut Fasteners manufactured at our Mountainside, New Jersey Facility.

To specify desired finish use corresponding finish digits shown below, and affix to the back end of the part number

Example: PT 050011 would read PT 050011DP with the DP finish added to the base of the part.

| | | | | | | | |
|------------|-----------------------------|-----------------|-------------------|------------------------------------|--------------------|----------|------|
| D | S301 ; WSD-M21P13-A1 | No spec | NOTE 1, 36 | Dacromet 320 (2 coats, no topcoat) | SILVER | Y | 240R |
| DB | | | NOTE 36 | Dacromet 320 & PLUS Blue topcoat | SPOTTY BLUE | Y | 500R |
| DP | S301 ; WSD-M21P13-A2 | GM6173M | PS 5873P, Note 36 | Dacromet 320 & PLUS topcoat | SILVER w/ Slight G | Y | 500R |
| DPB | S301 ; WSD-M21P13-A2 | GM6173M (Black) | PS 5873B, Note 36 | Dacromet 320 & PLUS Black topcoat | BLACK/DARK BRG | Y | 500R |
| DPL | S301 ; WSD-M21P13-A3 | No spec | PS 5873L, Note 36 | Dacromet 320 & PLUS L (Lube) | SILVER w/ Slight G | Y | 500R |

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|--------------------------------|--|--|--|---|--|------------------|------------|
| DPLB | NOTE 5 | NOTE 5 | NOTE 5 | Dacromet 320, PLUS L (Lube), PLUS Black topcoat | BLACK | Y | NOTE 5 |
| EBF | NOTE 3 | GM4345M 3K32/8; GMW3044 | PS Plating, PS4220+1207 | Zinc Electroplate & Clear Chromate | CLEAR/BRIGHT | Trivalent | 32R |
| EBG | S9; WSD M1P85-A1, WSB-M10P10-A1 | GM4345M 6K56/8; GMW3044 6K72/24 | PS Plating, PS4220+1207 | Zinc Electroplate & Clear Chromate | CLEAR/BRIGHT | Trivalent | 56R |
| EBH | S304; WSD M1P85-A2, WSB-M10P10-A1; S446 | GM4345M 9K96/0; GMW3044 9K96/24 | PS Plating, PS4220+1207 | Zinc Electroplate & Clear Chromate | CLEAR/BRIGHT | Trivalent | 96R |
| EBHH | S437 , WSS-M21P17-B3 | | | Electrolytic Zinc Plate, w/ Trivalent Clear Chromate, Leached and Sealed, Integral Torque Control Lubricant | SILVER-WHITE, LEACH & SEALED W/ TORQUE LUBRICANT | Trivalent | 96W/384R |
| EBHHN | S437 , WSS-M21P17-B3 + WSS-M4D240-A2 (nylon) | | | Electrolytic Zinc Plate, w/ Trivalent Clear Chromate, Leached and Sealed, Integral Torque Control Lubricant + Type II Nylon | SILVER-WHITE, LEACH & SEALED W/ TORQUE LUBRICANT + Black Nylon | Trivalent | |
| EBHN | WSS-M4D240A2 (nylon), NOTE 8; WSS-M4G87B (if with mastic sealer) | GMW3044 9K96/24; GM4383M (Nylon); Note 8 | MSDM20 (Nylon); Note 8 | Zinc Electroplate & Clear Chromate & Type II Nylon | CLEAR CHROMATE & BLACK NYLON | Trivalent | 322W/346R |
| ECF | NOTE 3 | GM4345M 3D72/48 | PS Plating, PS4220+1207 | Zinc Electroplate & Chromate | YELLOW | Y | 72W/96R |
| ECG | S36; WSD M1P85-A1, WSB-M10P10-A3 | GM4345M 6D96/48 | PS Plating, PS4220+1207 | Zinc Electroplate & Chromate | YELLOW | Y | 72W/96R |
| ECGN | WSS-M4D240A2 (nylon), NOTE 8; WSS-M4G87B; ESB-M4G87A (if with mastic sealer) | GM4383M (Nylon); Note 8; 1131M Type A (Mastic) | MSDM20 (Nylon); Note 8; MSCD69 (Mastic) | Zinc Electroplate & Chromate & Type II Nylon | YELLOW CHROMATE & BLACK NYLON | Y | 322W/346R |
| ECGTD | S100; See NOTE 27. Electro-Zinc Yellow Dichromate with Two Coats of Black Paint. | NOTE 27 | NOTE 27 | Zinc Electroplate & Yellow Chromate, 2 Coats Paint & Oil | BLACK | Y | 168R |

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|---|--|-------------------|-------------------------|--|-------------------|-----------------|-------------------|
| ECH | S309; WSD M1P85-A2, WSB-M10P10-A3 | GM4345M 6D96/48 | PS Plating, PS4220+1207 | Zinc Electroplate & Chromate | YELLOW | Y | 72W/128R |
| ECI | S309; WSB M1P85-A3, WSB-M10P10-A3 | GM4345M 12D144/48 | NOTE 2 | Zinc Electroplate & Chromate | YELLOW | Y | 72W/168R |
| ECK | S309; WSD M1P85-A3, WSB-M10P10-A3 | GM4345M 9D120/48 | PS Plating, PS4220+1207 | Zinc Electroplate & Chromate | YELLOW | Y | 72W/144R |
| EFG | S36B ; WSD M1P85-A1, WSB-M10P10-A2 | NOTE 3 | PS Plating, PS79+1207 | Zinc Electroplate & Chromate | BLACK | Y | 48W/72R |
| EFH | S421 (no oil); WSD M1P85-A2; WSB-M10P10-A2 | NOTE 3 | PS Plating, PS79+1207 | Zinc Electroplate & Chromate | BLACK | Y | 48W/96R |
| EFI | n/a | n/a | n/a | Zinc Electroplate & Chromate | BLACK | Y | 48W/96R |
| EFZ | S435; ESB M21P4-A7 | NOTE 4 | NOTE 4 | Zinc Electroplate, Chromate & Organic | BLACK, Organic Se | Y | 400R |
| EGI | S414; WSD M1P85-A3, WSB-M10P10-A5 | GM4345M 12D192/96 | NOTE 2 | Zinc Electroplate & Chromate Olive Drab | OLIVE DRAB | Y | NOTE 17 |
| EOF | S8; WSD M1P85-A1 | GM4345M 3U24/0 | PS Plating, PS4220 | Zinc Electroplate | NONE | N | 24R |
| EOG | S434; WSD M1P85-A1 | GM4345M 6U48/0 | PS Plating, PS4220 | Zinc Electroplate | NONE | N | 48R |
| EOH | S434; WSD M1P85-A2 | GM4345M 6U48/0 | PS Plating, PS4220 | Zinc Electroplate | NONE | N | 56R |
| EOI | S40; S434; WSD M1P85-A3 | GM4345M 12U96/0 | NOTE 2 | Zinc Electroplate | NONE | N | 96R |
| EOK | S434; WSD M1P85-A2 | GM4345M 9U72/0 | PS Plating, PS4220 | Zinc Electroplate | NONE | N | 72R |
| G | NOTE 4 | NOTE 4 | NOTE 4 | Galvanize | SILVER | N | 450R |
| GZ | NOTE 4, 5 | NOTE 4, 5 | PS 914; NOTE 4, 5 | Heavy Galvanize | SILVER | N | 800R |
| GB | WSS-M21P39-A3 | GMW14 (Black) | No spec | Geomet, 2 basecoats, plus Geoblack 147 topcoat | BLACK | N | 120W/480R |
| GMB | NOTE 4 | GMW3359 (Black) | NOTE 4 | Geomet, plus Geoblack 137 topcoat | BLACK | N | 144W/480R |
| GML | S438; WSS-M21P39-A1 | GMW3359 | NOTE 24 | Geomet, 2 basecoats + ML topcoat | METALLIC GREY | N | 720 |
| GP | WSS-M21P39-A2 | GM6173M | NOTE 24 | Geomet, 2 basecoat + Plus topcoat | METALLIC GREY | N | 480R |
| GPL | No spec | GMW14 | PS 5873 | Geomet, 2 basecoats + Plus L topcoat | METALLIC GREY | N | 144W/720R |
| GPB | No spec | GM6173M (Black) | PS-5873 Black | Geomet, 2 basecoats + 147 Geoblack topcoat | BLACK | N | 720R |

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|--------------------------------|---|-----------------------------|------------------|---|---|-----------|------------|
| JCK | WSE-M1P93-A6 NOTE 15 | NOTE 4 | PS 8956M-C40 | Tin/Zinc mechanical plate + chromate & Hyperseal | SILVER w/ Slight Yellow Color, plus Hyperseal | Y | 120W/250R |
| JTH | | | | Mechanical Tin Zinc w/ Trivalent Chromate and Hyperseal | Trivalent Chromate and Hyperseal | Trivalent | 72 R |
| L | NOTE 25 | GM6111M replaced by GM7111M | NOTE 25 | Dorritone, two coats w/ Silver topcoat | SILVER | N | 400R |
| LB | NOTE 4 | NOTE 4 | PS 7626 (Black) | Dorriflake, two coats w/ Black topcoat | BLACK | N | 400R |
| LEC | Special for one customer only; S440; WSS-M21P40-A1 (Note 45) | GMW4707 | NOTE 4 | Magni 560, Al pigmented organic topcoat over zinc electroplate w/ trivalent chrome (SPECIAL for one Customer Only) (see note 45) | SILVER/GRAY | N | 1000R |
| LET | S440; WSS-M21P40-A1 | GMW4707 | NOTE 4 | Magni 560, Al pigmented organic topcoat over zinc electroplate plate w/ trivalent chrome | SILVER/GRAY | Trivalent | 1000R |
| LF | S426; WSD-M21P11-B8 | GM7114M | NOTE 10 | Dorritech organic, two coats w/ Silver topcoat | SILVER | Y | 1000R |
| LK | S410; WSD M21P11-B1 | GM7111M | NOTE 10 | Dorriflake, two coats w/ Silver topcoat | SILVER | N | 480R |
| LL | S410; WSD M21P11-B1 | GM7111M | PS 7626 (Silver) | Dorriflake, two coats w/ Silver topcoat | SILVER | N | 480R |
| LZA | S441, WSS-M21P37-A2 | GM7111M | PS 7626 (Silver) | Zich-rich Basecoat, w/ Aluminum rich Lubricated organic topcoat | SILVER | N | 480R |
| LLBK | NOTE 4 | GM7111M (Black) | NOTE 4 | Dorriflake, two coats w/ black dye | BLACK | N | 480R |
| LLBL | S410; WSD M21P11-B1 | NOTE 4 | NOTE 4 | Dorriflake, two coats w/ blue dye | BLUE | N | 480R |
| LLGR | S410; WSD M21P11-B1 | NOTE 4 | NOTE 4 | Dorriflake, two coats w/ green dye | GREEN | N | 480R |
| LLRE | S410; WSD-M21P11-B1 | NOTE 4 | NOTE 4 | Dorriflake, two coats w/ red dye | RED | N | 480R |
| LM | NOTE 4 | NOTE 4 | NOTE 4 | Dorrimate | BLACK | N | 240R |

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|--------------------------------|----------------------------------|-------------------------|--|--|-------------|-----------|------------|
| LST | S440M; WSS-M21P40-A2 | GMW4707M | | Magni 560, Al pigmented organic topcoat over zinc mechanical plate w/ trivalent chrome | SILVER/GRAY | Trivalent | 1000R |
| LT | S426, WSD M21P11-B8 | GM7114M | NOTE 10 | Dorrtech, two coats + topcoat | SILVER | Y | 1000R |
| LTBLU | S426, WSD M21P11-B8 | GM7114M | NOTE 10 | Dorrtech, two coats w/ Blue topcoat | BLUE | Y | 1000R |
| LTGR | n/a | n/a | n/a | Dorrtech, two coats w/ Green Dye | GREEN | Y | 1000R |
| LZA | S441, WSS-M21P37-A2 | GM7111M | PS 7626 (Silver) | Zich-rich Basecoat, w/ Aluminum rich Lubricated organic topcoat | SILVER | N | 480R |
| ZOL | S439, WSS-M21P37-A1 | GMW3359 | PS 10378 (Threaded); PS 10633 (Non-threaded) | Zich-rich Basecoat, w/ Aluminum rich Lubricated organic topcoat | SILVER | N | 1000R |
| ZOLBK | S439, WSS-M21P37-A1 (Dyed Black) | GMW3359 | PS 10378 (Threaded); PS 10633 (Non-threaded) | Zich-rich Basecoat, w/ Aluminum rich Lubricated organic topcoat (Dyed Black) | BLACK | N | 1000R |
| M | S431; EST M21P9-A13 | GM6164M 400C | PS 8059 | Serma Guard; no topcoat | SILVER | N | 400R |
| MG | NOTE 4, 5 | NOTE 4, 5 | NOTE 4, 5 | Mechanical Galvanized | SILVER | N | 400R |
| N | WSS-M4D240A2 (nylon), NOTE 8 | GM4383M (Nylon); Note 8 | MSDM20; NOTE 8 | Nylon (See note 23) | BLACK | N | N/A |
| NAS | WSS-M21P25-A3 | NOTE 4 | NOTE 4 | Zinc / Nickel Alloy plating | BLACK | Y | 44/500 |
| NAS1 | WSS-M21P25-B1 | NOTE 4 | NOTE 4 | Zinc / Nickel Alloy plating | BLACK | N | 44/500 |
| NOC | | | | Nickel Electroplate Flash (Delphi Only) | SILVER | N | 0 |
| NOD | NOTE 4 | NOTE 4 | NOTE 4 | Nickel Electroplate (Valeo only) | SILVER | N | 0 |
| NOE | NOTE 4 | GM4254M Code 10 | NOTE 4 | Nickel Electroplate | SILVER | N | 0 |
| NOG | NOTE 4 | GM4254M Code 20 | NOTE 4 | Nickel Electroplate | SILVER | N | 0 |
| NOH | NOTE 4 | GM4254M Code 30 | NOTE 4 | Nickel Electroplate | SILVER | N | 0 |
| NOI | NOTE 4 | GM4254M Code 50 | NOTE 4 | Nickel Electroplate | SILVER | N | 16R |
| OOG | NOTE 4 | See NOTE 41 | NOTE 4 | See NOTE 41 | N/A | n/a | n/a |

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|--------------------------------|-------------------------------------|-----------------------------------|--------------------|--|------------------|-------------|------------|
| OOOS1 | | | | 301 Stainless Steel | N/A | N | |
| OOOS2 | | | | 302 Stainless Steel | N/A | N | |
| OOOS3 | | | | 316 Stainless Steel | N/A | N | |
| OOOS4 | | | | 410 Stainless steel | N/A | N | |
| OS | NOTE 43 | NOTE 43 | NOTE 43 | See NOTE 43 | N/A | n/a | n/a |
| P | NOTE 4 | GMW3179 replaces (GM4435M Code D) | PS-80; NOTE 6 | Phosphate | GREY | N (Note 47) | 0 |
| PFG | NOTE 4 | GMW3179 Code G | NOTE 4 | Zinc Phosphate w/ Lube Enhanced Organic Sealer | BLACK | N | 72R |
| PG | S2, S76; NOTE 16 | GMW3179 replaces (GM4435M Code A) | PS 80 | Phosphate & Oil (12%-15%) | BLACK | N (Note 47) | 72R |
| PGA | NOTE 4 | 6035M | NOTE 4 | Phosphate & Oil (Heavy 18%-20%) | BLACK | N (Note 47) | 168R |
| PGD | NOTE 38 | NOTE 38 | NOTE 38 | Phosphate & Oil (Dry to touch) Note 37. | BLACK | N (Note 47) | 36R |
| PGL | S58 | GMW3179 replaces (4435M Code A) | NOTE 4 | Phosphate & Oil (Thin 8%-10%) | BLACK | N (Note 47) | 36R |
| PL | S428; NOTE 4, 7, 31 | GM6431M; Note 4, 7 | PF 8871; Note 4, 7 | Aqua Phos (Inactive 2/4/2003) | BLACK | N | 408R |
| PQ | S56 | NOTE 4 | AM-12046 | Aqua Phos | BLACK | N | 240R |
| PR | S60 | NOTE 4 | NOTE 4 | Aqua Phos | BLACK | N | 240R |
| SBH | WSD M1P85-A2, WSB M10P10-A1 | GM4345M,6MK56/8 | PS Plating, PS1207 | Mechanical Zinc Plate & Chromate | CLEAR/BRIGHT | Trivalent | 56R |
| SCF | WSD M1P85-A1, WSB-M10P10-A3 | GM4345M,3MD72/48 | PS Plating | Mechanical Zinc Plate & Chromate | YELLOW TO BROWN | Y | 48W/72R |
| SCG | S36M; WSD M1P85-A1, WSB-M10P10-A3 | GM4345M,6MD120/72 | PS Plating | Mechanical Zinc Plate & Chromate | YELLOW TO BROWN | Y | 72W/120R |
| SCH | S309M; WSD M1P85-A2, WSB-M10P 10-A3 | NOTE 3 | PS Plating, PS1207 | Mechanical Zinc Plate & Chromate | YELLOW TO BROWN | Y | 72W/128R |
| SCI | S309M; WSD M1P85-A3, WSB-M10P10-A3 | GM4345M, 12MD16 | PS Plating, PS1207 | Mechanical Zinc Plate & Chromate | YELLOW TO BROWN | Y | 72W/168R |
| SCK | S309M; WSD M1P85-A3, WSB-M10P10-A3 | GM4345M, 9MD144 | NOTE 3 | Mechanical Zinc Plate & Chromate | YELLOW TO BROWN | Y | 72W/144R |
| SFG | S36MB; WSB M1P85-A1, WSB-M10P10-A2 | NOTE 4 | PS1207 | Mechanical Zinc Plate & Chromate | BLACK | Y | 48W/80R |
| SFGH | S36MB; WSD-M1P85-A1 WSB-M10P10-A2 | NOTE 26, 3 Levels | PS1207 | Mechanical Zinc Plate & Chromate | BLACK w/ Hyperse | Y | 48W/80R |

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|---|---|----------------------------|------------------------------|---|--|------------------|-------------------|
| SFH | S421 (no oil) WSD M1P85-A2, WSB-M10P10-A2 | NOTE 4 | PS Plating, PS1207 | Mechanical Zinc Plate & Chromate | BLACK | Y | 48W/96R |
| SFHH | | | | Mechanical Zinc Plate & Chromate + Hyperseal | BLACK | Y | 48W/96R |
| SFI | S421 (no oil) WSD M1P85-A3, WSB-M10P10-A2 | NOTE 19 | PS Plating, PS1207 | Mechanical Zinc Plate & Chromate | BLACK | Y | 48W/168R |
| SFK | S421 (no oil) WSD M1P85-A3, WSB-M10P10-A2 | NOTE 4 | NOTE 3 | Mechanical Zinc Plate & Chromate | BLACK | Y | 48W/144R |
| SGH | WSD M1P85-A2, WSB-M10P10-A5 | GM4345M, 6ME240/72 | PS Plating, PS1536C25 PS1207 | Mechanical Zinc Plate & Chromate | OLIVE DRAB | Y | NOTE 17 |
| SOF | S8M; S434M; WSD M1P85-A1 | GM4345M, 3MU24/0 | PS Plating | Mechanical Zinc Plate | SILVER | N | 24R |
| SOG | S434M; WSD M1P85-A1 | GM4345M, 6MU48/0 | PS Plating | Mechanical Zinc Plate | SILVER | N | 48R |
| SOH | S434M; WSD M1P85-A2 | NOTE 3 | PS Plating, PS1536C25 | Mechanical Zinc Plate | SILVER | N | 56R |
| SOHOS | WSD M1P85-A2 | NOTE 3 | PS Plating, PS1536C25 | Mechanical Zinc Plate | SILVER | N | 56R |
| SOI | S40M; WSD M1P85-A3 | GM4345M, 12MU96/0 | PS Plating, PS1536C50 | Mechanical Zinc Plate | SILVER | N | 96R |
| SOK | WSD M1P85-A2 | GM4245M, 9MU72/0 | PS Plating | Mechanical Zinc Plate | SILVER | N | 72R |
| SPH | | | | Mechanical Zinc Plate w/ topcoat "Plus" | SILVER | N | 56R |
| SPHOS | none | none | none | Mechanical Zinc Plate w/ topcoat "Plus" | SILVER | N | 56 |
| STG | none | none | none | Mechanical Zinc Plate w/ Trivalent Chrome Clear Topcoat | CLEAR / SILVER | Trivalent | 24W/72R |
| STH | none | GM4344M, 9MK120/48 (Clear) | none | Mechanical Zinc Plate w/ Trivalent Chrome Clear Topcoat | CLEAR / BLUISH | Trivalent | 48W/120R |
| STHH | S437M , WSS-M21P17-B4 | | | Mechanical Zinc Plate, w/ Trivalent Clear Chromate, Leached and Sealed, Integral Torque Control Lubricant | SILVER-WHITE, LEACH & SEALED W/ TORQUE LUBRICANT | Trivalent | 96W/240R |

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|--------------------------------|---------------------|-----------------------------------|------------------|---|--|-------------|-------------|
| STK | none | GM4344M, 9MK120/48 (Clear) | none | Mechanical Zinc Plate w/ Trivalent Chrome Clear Topcoat | CLEAR / BLUISH | Trivalent | 48W/120R |
| STKH | | GMW3044, 8MK 240/120X (Clear) | | Mechanical Zinc Plate, w/ Trivalent Clear Chromate, and Sealer | SILVER-WHITE, LEACH & SEALED W/ TORQUE LUBRICANT | Trivalent | 120W/240R |
| SJH | | | | Mechanical Zinc Plate & Black dye for id | Black (FOR ID.) | N | |
| SYH | | | | Mechanical Zinc Plate & Yellow dye for id | YELLOW (FOR ID.) | N | |
| TDD | WSD-M21P10-B1 | NOTE 4 | NOTE 4 | Phosphate & 2 coat Paint (no oil) | BLACK | N (Note 47) | 72R |
| TD | S306; WSD M21P10-B3 | GM6174M | NOTE 4 | Phosphate & 2 coat Paint & oil | BLACK | N (Note 47) | 240R |
| TDK | NOTE 4 | NOTE 4 | NOTE 4 | Phosphate & 2 coat Paint & oil | GREEN | N (Note 47) | 240R |
| TE | NOTE 30 | NOTE 30 | NOTE 30 | Zn Phosphate + Chromic acid seal + Electrolytic Paint + oil. NOTE 30. | BLACK | Y | 240R |
| TEA | NOTE 4 | NOTE 4 | PS-7902A | Zn Phosphate + Electrophoretically deposited Paint Coating + oil | BLACK | N | 240R |
| TED | NOTE 4 | NOTE 4 | PS 7902 B | Zn Phosphate + Black E-Coat (No rust prventative oil) | BLACK | N | NOTE 12, 13 |
| TEF | S424; WSD-M21P10-B2 | NOTE 4 | NOTE 4 | Black Organic Protective Coating (with Water Based, Dry to touch oil dip) | BLACK | N | 120 |
| TEG | NOTE 4 | GM6047M | NOTE 4 | Phosphate / Electro Organic / Oil Type | BLACK | N | 168R |
| TFH | NOTE 4 | GM6046M 13T240; Note 11 | NOTE 4 | Zinc Phosphate & Fluorocarbon Paint | BLACK | N | 240R |
| TS | S303, WSD M21P10-B2 | GMW3179 replaces (GM4435M Code B) | NOTE 4 | Phosphate & 1 coat Paint & oil | BLACK | N (Note 47) | 144R |
| TSD | NOTE 4 | NOTE 4 | NOTE 4 | Phosphate & 1 coat Paint, Dry (Note 35) | BLACK | N (Note 47) | 24R |

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|--------------------------------|-----------------------------|-----------------------------------|-------------------|---|---|--------------------|------------|
| TSK | WSD M21P10-B2 | GMW3179 replaces (GM4435M Code B) | | Phosphate & 1 coat Paint & oil | GREEN | N (Note 47) | 144R |
| TSV | WSD M21P10-B2 | GMW3179 replaces (GM4435M Code B) | NOTE 4 | Phosphate & 1 coat Paint & oil | OLIVE DRAB | N (Note 47) | 144R |
| W | | | | Not a finish, see Note 33 | | n/a | |
| X | S; S300 | N/A | N/A | No Finish, Plain Finish | STEEL | n/a | 0 |
| X | WSS-M4G87-B (mastic sealer) | GM1131M Type A | MS-CD69 | Mastic (MUST See note 22 !!!!) | BLACK | n/a | N/A |
| XG | S300 | N/A | N/A | Rust Inhibitor, water based | STEEL | N | 0 |
| YB | NOTE 4 | GM4347M | PS 1129 | Black Oxide | BLACK | N | 0 |
| YBZ | NOTE 4 | NOTE 4 | NOTE 4 | Black Oxide w/ Oil, see note 39 | BLACK | N | 0 |
| YC | S5, S403 | NOTE 4 | PS 792 | Copper Flash - Electro | COPPER | N | 0 |
| YCC | NOTE 4 | NOTE 4 | PS 8955Co Code 30 | Zinc/Cobalt and Black chromate | BLACK | Y | 140W/300R |
| YE | NOTE 4, 21 | NOTE 4, 21 | NOTE 4, 21 | Electroless Nickel | Silver | N | 0 |
| YF | S11, S403 | GM4250M/ASTM B734 | PS 4935 | Copper Flash | COPPER | N | 0 |
| YFL | S11, S403 | GM4250M/ASTM B734 | PS 4935 | Copper Flash & Laser Sorted | COPPER | N | 0 |
| YI | WSF M1P89-A2; NOTE 4 | GM6280M; GMW4700; Note 4 | PS 8955Fe Code 30 | Zinc/Iron and Black Chromate | BLACK | Y | 140W/552R |
| YN | NOTE 4 | NOTE 4 | PS 8955Ni Code 20 | Zinc/Nickel and Chromate | YELLOW | Y | 240W/720R |
| YP | NOTE 4 | GM6138M | NOTE 4 | Multilayer Electroplate, see NOTE 29 | BLACK | N | 240R |
| YW | S61; WSF-M21P25-A2 | NOTE 4 | NOTE 4 | E-plated .0002" Ni + .0005" Nickel/Zinc | BLACK | N | 48W/500R |
| | | | | & Black Organic topcoat | | | |
| YWF | WSF-M21P25-A1 | NOTE 4 | NOTE 4 | E-plated .0002" Ni + .0005" Nickel/Zinc | BLACK | Y | 48W/500R |
| | | | | w/ Black Chromate Conversion coating | | | |
| YZ | NOTE 4 | NOTE 4 | PS 8956E | Tin/Zinc Electroplate, with Chromate, plus Sealer | SILVER, Slight Yellow Color, plus Hyperseal | Y | 120W/400R |

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|--------------------------------|---------------------|---------|--|---|--------------------|----------|---------------------------|
| YZH | N/A | N/A | N/A | (Temporary designator) SN/ZN e-plate alloy w/ yellow chromate Honda spec MFSNZN1CT hex free ? | YELLOW | Y | 480 |
| Z | | | #REF! | Zinc Plated as Components | Zinc Plated as Com | n/a | Zinc Plated as Components |
| ZCGN | | | | Zinc assembly, see NOTE 28 | YELLOW | Y | Zinc Plated as Components |
| ZF | N/A | N/A | N/A | Zinc flash | SILVER | N | 0 |
| ZFL | N/A | N/A | N/A | Zinc Flash w/ Laser Sort | SILVER | N | 0 |
| ZFLH | | | | Zinc Flash w/ Laser Sort w/ Hyperseal EXP | SILVER | N | |
| ZOL | S439, WSS-M21P37-A1 | GMW3359 | PS 10378 (Threaded); PS 10633 (Non-threaded) | Zich-rich Basecoat, w/ Aluminum rich Lubricated organic topcoat | SILVER | N | 1000R |

The following notes apply to above entries:

NOTE 1 Chrysler & GM specifications require a top-coat sealer. Chry specs call for min 400 hours salt spray. GM for 240 hours ss. Palnut's "D" finish only yields 240 hours SS

NOTE 2 0.0005" plating is not to be applied to Chrysler parts with HRC31 or higher. For parts with hardness less than HRC31 use PS Plating, PS4220+PS1207

NOTE 3 This plating thickness not covered in customer specification

NOTE 4 Do not supply this finish to this customer

NOTE 5 Not currently applying this finish

NOTE 6 Chrysler specs require phosphate to be coated with rust preventative prior to salt spray test

NOTE 7 The Texacote 440 has been obsoleted by Ford due to problems with it. The Spec S428 has been obsoleted and replaced with S436. No other automaker apparently used the texacote.

NOTE 8 Ford Worldwide spec. for nylon only is wss-m4d240a2. Ford Specs. for ECG finish apply to ECGN. Chrysler & GM specs vary depending on if part is used in direct sunlight (EX/UV) or if it is used for exterior applications not exposed to sunlight (EX). SS hours shown are for EX application.

NOTE 9 Hyperseal may be added to any zinc plate (mechanical or electro) by adding an "H" in the 4th character of the finish; salt spray hours should be adjusted

NOTE 10 Chrysler does not have a spec for the LF, LK, or LT finishes.

NOTE 11 GM switched finish from TFH to TE. We no longer supply TFH to GM

NOTE 12 Ford & GM specs give SS hours for oiled parts only

NOTE 13 Chrysler spec only gives Salt Spray hours for oiled parts.

NOTE 14 The F & G eletro & mech plated finishes with are not covered under Ford's worldwide specs s304 (clear/bright) or s309 (yellow/bronze), S421 (Black) because F & G thicknesses are less than the minimal required (.0003").

Parts with F and G thicknesses use these specifications; however, due to the inexactness of plating technology which results in overplating.

NOTE 15 Ford spec. wse-m1p93-a6 has no provision for hyperseal. Ford does not have a separate spec for hyperseal. For JCK without hyperseal, salt spray hours are 72/240. There is no Ford worldwide spec for the JCK finish

NOTE 16 Ford specs for S2, and S76 were obsoleted and replaced with S430. S430 is for internal engine parts only. S430 references wsd-m3p35-a3. For this, 24 hours corrosion resistance and 10-20 g/sq meter coat weight is required. Ford drawings normally specify S2 and S76.

NOTE 17 Palnut SS standard too old for use. Update if needed.

| Finishes for "D" & "T" Stamped | Ford | GM | Daimler Chrysler | Description | Color | Benefits | SALT SPRAY |
|--------------------------------|------|----|------------------|-------------|-------|----------|------------|
|--------------------------------|------|----|------------------|-------------|-------|----------|------------|

NOTE 18 LL and LK are chromium free compounds.

NOTE 19 GM does not call out a black chromate from silver salts; however, on GM drawing for PZ270040SFI it calls for 168 hours to red rust which indicates 12DM168/72 in spec 4345M. Hours are 72W/168R for SFI for GM

NOTE 20 GM ALSO REQUIRES HEAT TREATING AND FINISHING FASTENERS IAW SAE/USCAR-5 - AVOIDANCE OF HYDROGEN EMBRITTLEMENT OF STEEL.

NOTE 21 Electroless nickel must conform to **ASTM B733**.

NOTE 22 This is not a finish. The X referenced here refers to a mastic applied to the part. This X is always located in the fourth character of a part number's prefix. Due to part numbering errors, some parts receive mastic, but are not numbered with an X in the prefix. Those parts are SFOW, SOOZ, and SPOW types. An SPOX is therefore the same as an SPOW. There are no differences in mastics. All mastics are composed of the same materials.

NOTE 23 The N is for nylon. Whenever an "N" appears in the fourth character of a part number's suffix, that part receives a nylon coating.

NOTE 24 Chrysler has no spec for Plus or ML top coat over Geomet for fasteners. Ford has no spec for the Plus L. (Ref. 12/10/02) Check latest info.

NOTE 25 Previously it was believed that the "L" finish was covered by Chrysler and Ford specs. New information; however, indicates that Depor, the finish subcontractor, applies the finish specifically to GM 6111-M. Chrysler and Ford specs may or may not apply

NOTE 26 See GM Spec 4345M for type M coatings

NOTE 27 This finish is currently for Ford Electronics and Refrigeration, and for Visteon. See Ford print 390429.

NOTE 28 This assembly is made from Nut w/ Mechanical Plate Zinc w/ Chromate and Cap w/ Electroplate Zinc w/ Chromate, then Nylon seal on external bottom of Nut.

NOTE 29 This process created for one part to date. Created for GM Spec GM6138M, Rev. H. Multilayer process: Electrodeposited zinc 5 microns to 20 microns thick. Top layer (Black) shall be 25 microns max. Parts must be baked to avoid embrittlement 150 deg. C. 8 hrs. min.

NOTE 30 Suffix TE is no longer available. This finish is detailed differently for Ford, Daimler-Chrysler, and GM. Use the finish that applies to the specific customer. Similar finishes may change at a later date.

NOTE 31 We are not supplying S428 any longer.

NOTE 32 Added suffix ZOL

NOTE 33 The suffix W when added before a finish suffix denotes "final sorting" on Witte Screen equipment before final inspection.

NOTE 34 Added suffix EFI per engineering instruction. "Thicker zinc to better adhere black chromate." No salt spray requirement from customer.

NOTE 35 Added suffix TSD as equivalent of Massillon -434. Cosmetic finish, minimal Salt Spray resistance. Commercial application.

NOTE 36 Tinnerman-Palnut Mountainside is not an approved source of this finish. This finish sent to Daimler-Chrysler and affiliates must come from an approved vendor. Was "IN" in error, except DPL.

NOTE 37 Added callout for Dry to Touch for Phosphate and Oil. This is a light oil with an additional "Spin" to assure dry part.

NOTE 38 No current Spec. for this finish

NOTE 39 This callout is for one part to be sent to one vendor (SWD Co.) and is for blackened stainless steel (302) which engineering has approved as a process.

NOTE 40 Corrosion resistance 48 hrs. white and no more than 10% white after 144 hrs., 500 hrs red.

NOTE 41 This is not a finish. This is a second SUFFIX added to an existing finish to denote special packaging for a GM part in the GM 9X9X6 Perforated Carton.

NOTE 42

NOTE 43 This is not a finish. This is a second suffix which when used means that the finish goes to Outside Service, but this is not all inclusive.

NOTE 44 This finish follows Valeo Spec: VMAT-10012, 6MK72/24 (Clear).

NOTE 45 This finish was created for General Fasteners Only. A H/E liability waiver was signed.

NOTE 46 Send to Erieview Metal Finishing.

NOTE 47 Starting 1/03/2005 production, Mountainside PHOSPHATED parts are NOW HEX CHROME FREE.

Last Revised 2/17/05